



White-Nose Syndrome



Little Brown Bats in New York with WNS. Photo by: Nancy Heaslip

WHAT IS WHITE-NOSE SYNDROME?

White-Nose syndrome (WNS) is a disease causing mass die-offs of bats at hibernation sites in the U.S. and Canada (90—100 % at some locations). The US Fish and Wildlife Service estimates 5.6-6.7 million bats have died from WNS in just six years.

The disease is caused by a fungal pathogen called *Pseudogymnoascus destructans*, which erodes the bats skin tissue. Studies show that WNS causes bats to arouse during hibernation more frequently than normal; disrupting physiological processes. Scientists are researching this disease, how it affects different bat species, and how to contain or cure it.

SIGNS OF WHITE-NOSE SYNDROME

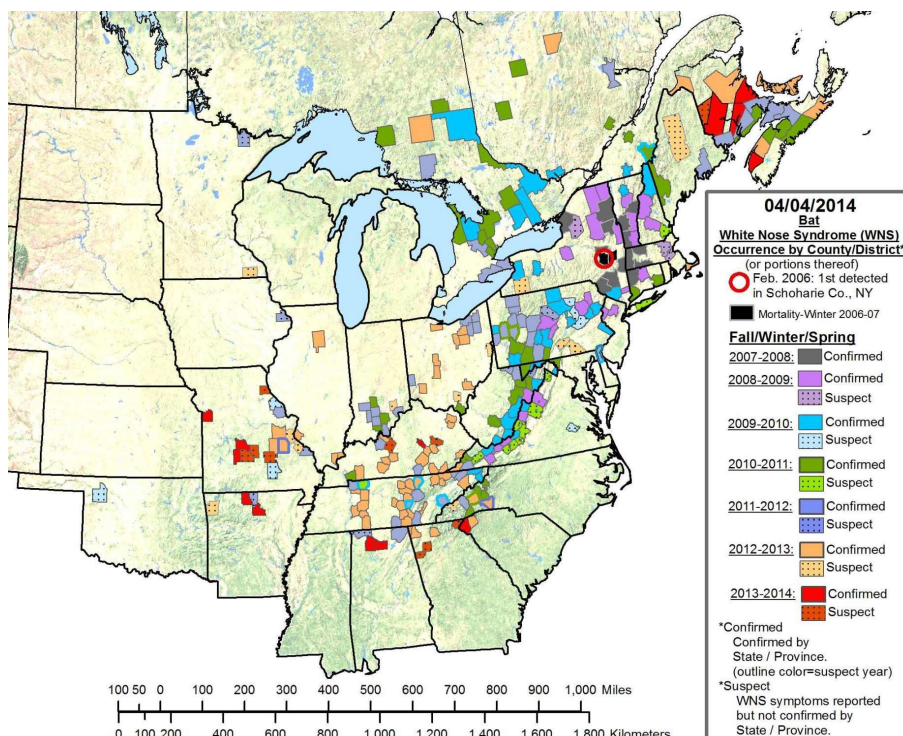
- White fungus growing on exposed skin: muzzle, wings, ears and/or tail.
- Not all bats with White-Nose Syndrome have visible fungus, but it has still grown into their skin tissues and caused extensive damage.
- The fungus requires cold temperatures to grow, it is not seen on bats during summer or fall.
- Low weights, emaciation and wing scarring.
- Strange behaviors at hibernacula: bats flying outside during the day in winter, clustering near the entrance or flying to their summer colony in winter.
- Dead bats on the landscape in winter.

SPECIES AFFECTED

Live bats returned to Delaware from hibernation in Spring 2010 with fungus on their skin. In Winter 2012 bats confirmed infected with White-Nose Syndrome were found hibernating at Fort Delaware and Fort DuPont State Parks.

So far, only bats that hibernate communally are affected. In Delaware this includes little brown bat, big brown bat, tri-colored bat (formerly eastern pipistrelle), northern long-eared bat, and possibly small-footed bat. A total of 10 species are affected across the country.

No reported human, pet or livestock illnesses have been linked to WNS. No wildlife other than bats have exhibited



Map by: Lindsey Heffernan, PA Game Commission



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WHY BE CONCERNED?

- White-Nose Syndrome could result in regional extinctions of some once-common bat species.
- Northeastern bats are insectivores. They eat many nuisance insects like mosquitos and agricultural pests. One bat can eat 50—75% of its body weight in flying insects in one night. That's nearly 600 insects per hour!
- The primary Delaware species impacted by WNS are Northern long-eared, little brown, tri-colored, and big brown bats.
- White-Nose Syndrome spread quickly; see map. The disease may soon make its way to some of the largest hibernation sites in the world. The result could be catastrophic.
- WNS could reduce the reproductive rates of bats who survive lighter infections of the disease, further restricting possible population recovery.



Heavy fungus load, Gregory Turner, PA

HOW IS IT SPREAD?

- The fungal spores can spread through the substrate, directly from bat-to-bat and have been found attached to materials (like cloth) that have been in affected sites.
- Migrating bats carry spores hundreds of miles.
- People (cavers, researchers and casual visitors) could inadvertently be spreading it by visiting affected sites and then unaffected sites (caves, mines, or buildings where bats hibernate).

WHAT IS BEING DONE

Nationally:

- U.S. Fish and Wildlife Service developed a national White-Nose Syndrome Response Plan, and is conducting, funding, and coordinating research.
- Universities, government agencies and NGO's are researching specific questions and solutions.
- Protocols are in place for systematic action to protect bats, document WNS events and population changes. In some areas voluntary or mandatory restrictions are placed on cave visitation to help protect surviving bats at their hibernacula.

Delaware:

- Part of national and multi-state agency teams working to track the disease, plan research and find answers.
- Collecting information on location and size of summer colonies for population monitoring.
- Managing a volunteer project (Bat Spotters) to adopt and study Delaware's maternity colonies.
- Examining live and dead bats for White-Nose Syndrome. Collecting samples from individual bats for DNA and WNS analysis.



DE Little brown bat with heavy wing scarring. Photo: DEFW